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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

WACHTEL, ALEXIS A

ART UNIT PAPER NUMBER

1764

DATE MAILED: 07/31/2003

16

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/662,850

Applicant(s)

LAMLA ET AL.

Examiner

Alexis Wachtel

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-- Th MAILING DATE of this communication appears on th cover sheet with the correspond nce address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 March 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 29-47 is/are pending in the application.
- 4a) Of the above claim(s) 33-47 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 29-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- ☐ Interview Summary (PTO-413) Paper No(s). _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other:

Detailed Action

Election/Restrictions

1. Newly submitted claim 33-47 directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: claims 33-47 are directed to a distinct method whereas claims 23-32 are directed to a distinct apparatus.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 33-47 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 23-28 are rejected under 35 U.S.C. 102(e) as being anticipated by DE 196-54-361 A1 (see partial translation).

DE 196-54-361 A1 discloses a reactor made of stacked plates (Fig.1, items 2 and 3) which are stacked alternatively to provide two separate sets of channels 4a,4b.

Channels 4a contain chemical reagents and channels 4b carry hot liquid for heat

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transfer to channels 4a. The walls of channels 4a are oxidized to form a microporous layer into which the catalytic material can be deposited (See translation). Examiner interprets each plate as a catalyst layer. Since the plates contain a heat exchange fluid, contact edges of said plates are inherently sealed at their edges to prevent leakage of reactant and/or heat exchanger fluid in a direction normal to the surface of the reaction stack defined by channels. Additionally, the top and bottom plates of the reaction stack are inherently sealed at their edges for the same reasons set forth above.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 29-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over DE 196-54-361 A1 in view of US 6,200,696 to Farooque et al.

Per claim 29, DE 196-54-361 A1 fails to teach that the reactor made of stacked plates additionally includes a gas tight sheet material covering the surface of the stack between the first and second end plates and per claim 30 wherein the sheet material comprises at least one vent hole therein.

Farooque et al teaches a gas tight sheet that surrounds the layers (Col 4, lines 19-22) and has at least one opening (Fig. 1B) for containing leaking fuel. In view of this

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teaching it would have been obvious to have provided a gas tight sheet that surrounds the stacked plates and has at least one opening motivated by the desire to contain any leaking fluids should the edge seals provided in DE 196-54-361 A1 fail.

6. Claims 31-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over DE 196-54-361 A1 in view of US 6168703 to Lee et al.

Per claim 31, DE 196-54-361 A1 fails to teach that the stacked plates of the disclosed reactor are made of dendritic copper mixed with catalyst.

Lee et al teach the use of dendritic copper for the purpose of preventing thermal degradation (Col 1, lines 34-37). In view of this teaching it would have been obvious for one of ordinary skill to have used dendritic copper as the material to make the stacked plates. One of ordinary skill would have been motivated by the desire to improve the longevity of stacked plates. Examiner notes that anodic oxidation as disclosed by DE 196-54-361 A1 would create a porous structure in the copper which would then be filled with catalyst.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Alex Wachtel, whose number is (703)-306-0320. The Examiner can normally be reached Mondays-Fridays from 10:30am to 6:30pm.

If attempts to reach the Examiner by telephone are unsuccessful and the matter is urgent, the Examiner's supervisor, Mr. Glenn Caldarola can be reached at (703) 308-6824. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for

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After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Alex Wachtel

Alex Wachtel
Aw *aw* 7-28-03

Partial translation DE 196 54 361

Claim 1

Reactor in a stack design having a stack 1 of a multiple number of plates and /or tubularly shaped elements 2 and 3 which are so created and stacked one above another...two groups of fluid separated from one another of flow channels 4a, 4b which are in liquid connection between each other are formed which 4a,4b are essentially perpendicular to the direction of the stack and are alternatingly arranged in the stack, and of which a first group functions as reaction channels 4a and the second group functions as heat carrier channels 4b whereby the walls of the elements facing the reaction channels 4a are at least partially provided with a catalyst coating characterized in that the catalyst coating is formed by means of microporous-generating anodic oxidation of the walls and subsequent mounting of catalyst material on the walls thus oxidized.

Claims 2 line 25-

The flow channel plate units and the connecting covering plate units are alternatingly stacked above one another and the catalyst coating is mounted at corresponding walls of the connecting covering plate such that no fluid connection arises between flow channel breakthroughs of adjacent flow channel plate units.

Translated by John Koytcheff 7-24-2003
Translations Branch/STIC
USPTO